

MEMORANDUM

DATE: June 12, 2015

TO: Heather Kendall-Miller, Native American Rights Fund

FROM: Allison MacEwan, Principal Engineer, RIDOLFI Inc.

SUBJECT: Review Comments on Chuitna Coal Project Jurisdictional Determination Report and Related Mapping, July 2014

Introduction

Per the request of the Native American Rights Fund (NARF), Ridolfi has conducted a review of the Chuitna Coal Project Jurisdictional Determination Report and Related Mapping (JD Report), July 2014 prepared by HDR Alaska for by PacRim Coal, LP. Our general comments resulting from this review are provided below.

General Comments

Figures 1 through 4 were not included in the document pdf and have not been reviewed.

Appendices were not included in the pdf version of the report provided for review with the exception of the wetlands and waterbodies mapbooks that would be part of Appendix G. One of the missing appendices is Appendix H, the USACE Wetland Delineation Verification Trip Report. The report appendices, including Appendix H, should be provided for review

The limitations of the approach taken to identify and characterize aquatic resources, as well as the intended use of the information presented should be clearly stated. The link between the information presented in the JD Report and the Functional Assessment approach described in the December 2014 Chuitna Coal Project Revised Wetland and Waterbody Functional Assessment should also be clarified. Were a common system and common mapping boundaries used for both documents?

It appears that the field work conducted by HDR and/or the US Army Corps of Engineers (USACE) encompasses only approximately 65% of the mapping area. Furthermore, the full scope of the field effort described in Section 2.3 is unclear. Section 2.3 notes that two days of field verification of wetland delineation occurred in October 2012, followed by four days of field verification of wetland delineation by the Corps in August 2013. What percentage of the mapped wetland areas were field verified?

There are only 66 acres of stream channel attributed to the entire 13,654-acre mapping area, which appears to be low. Some stream segments in the mapbooks are represented as polygons comprised of blue lines surrounded by a yellow line border, while other stream segments are displayed only as blue lines without the yellow polygon boundary. It is unclear whether both stream representations are currently being counted as polygons which contribute to the 66-acres assigned a "stream" classification. Please clarify.

Section 2.4.1 indicates that "perennial streams too narrow to be measured on aerial imagery were assigned an average width of 1.5 feet". This assumption may underestimate actual stream width and

contribute to the underrepresentation of stream acreage. What is the technical basis of this assumption and to what extent was it field verified?

Section 2.4.1 indicates that “the fish study team provided average width data for sixteen reaches of perennial streams”. It is unclear how many field measurements were used to derive an average width calculation, or how representative they are of the actual width of the stream. It is also how the stream channel boundaries were defined and whether overbank areas activated at higher flows are properly included within the stream channel acreage. More information is needed on the methodology utilized, as it appears that stream areas may have been underestimated.

Within the mapbooks, stream segments are not continuously mapped within areas labeled as vegetated ponds, such as beaver ponds. These channels may in fact be present within the pond areas. This assumption likely leads to the underestimation of stream acreage.

Is classification system used for mapping and labeling wetlands and waterbody polygons in the JD Report considered to be a standardized labeling system that complies with federal or other accepted standards, or was a methodology unique to this project employed? Please clarify.

Section 2.4.3 refers to “questionable wetland areas”. These are defined as areas not visited in the field and for which a wetland determination could not be made based solely on aerial photo determination without field data. What is the total acreage of mapped questionable wetland areas? Are these areas shown in the mapbooks included with the JD Report? If so, how were they characterized for the purposes of the jurisdictional determination?